

Title (en)  
THERMALLY STABLE, LOW BIREFRINGENT COPOLYIMIDE FILMS

Title (de)  
WÄRMESTABILE COPOLYIMIDFILME MIT NIEDRIGER DOPPELBRECHUNG

Title (fr)  
FILMS DE COPOLYIMIDE À FAIBLE BIRÉFRINGENCE, THERMIQUEMENT STABLES

Publication  
**EP 2744851 A2 20140625 (EN)**

Application  
**EP 12825153 A 20120817**

Priority  
• US 201161525237 P 20110819  
• US 2012051322 W 20120817

Abstract (en)  
[origin: WO2013028509A2] A class of solvent resistant, flexible copolyimide substrates having high optical transparency (>80% from 400 to 750 nm) that is retained after brief exposure to 300°C, near-zero birefringence (< 0.001) and a maximum CTE of approximately 60 ppm/°C is disclosed. The copolyimides are prepared from alicyclic dianhydrides, aromatic cardo diamines, and aromatic diamines containing free carboxyl groups. The substrates are manufactured from solutions of the copolyimides containing multifunctional epoxides in the form of single layer films, multilayer laminates and glass fiber reinforced composite films. The substrates can be used in the construction of flexible optical displays, and other microelectronic and photovoltaic devices that require their unique combination of properties.

IPC 8 full level  
**B32B 17/06** (2006.01); **C08G 69/48** (2006.01); **C08G 73/10** (2006.01); **C08J 5/04** (2006.01); **C08J 5/18** (2006.01); **C08L 79/08** (2006.01); **G02F 1/1333** (2006.01); **H01L 31/0392** (2006.01); **H05K 1/03** (2006.01)

CPC (source: EP US)  
**B32B 17/10** (2013.01 - EP US); **C08G 73/1042** (2013.01 - EP US); **C08G 73/1078** (2013.01 - EP US); **C08J 5/043** (2013.01 - EP US); **C08J 5/18** (2013.01 - EP US); **C08K 7/14** (2013.01 - EP); **C08L 63/00** (2013.01 - EP); **C08L 79/08** (2013.01 - EP US); **H01L 31/0392** (2013.01 - EP); **H01L 31/03926** (2013.01 - EP); **B32B 27/281** (2013.01 - US); **C08J 2379/08** (2013.01 - EP US); **G02F 1/133305** (2013.01 - EP); **H05K 1/0393** (2013.01 - EP); **Y02E 10/50** (2013.01 - EP); **Y10T 428/24975** (2015.01 - EP); **Y10T 428/31623** (2015.04 - EP); **Y10T 428/31721** (2015.04 - US)

Cited by  
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Designated contracting state (EPC)  
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DOCDB simple family (publication)  
**WO 2013028509 A2 20130228**; **WO 2013028509 A3 20130510**; CN 103987763 A 20140813; CN 103987763 B 20171229; EP 2744851 A2 20140625; EP 2744851 A4 20150121; EP 2744851 B1 20180919; JP 2014524512 A 20140922; JP 6174580 B2 20170802; KR 102160496 B1 20200928; KR 20140054301 A 20140508; US 11084906 B2 20210810; US 2013216803 A1 20130822

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